

Principal Investigator (Last, First, Middle) Samet James M.

BIOGRAPHICAL SKETCH

NAME James M. Samet	POSITION TITLE Research Biologist/Principal Investigator		
EDUCATION (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE	YEAR(s)	FIELD OF STUDY
University of Florida	B.S.	1985	Microbiology and Cell Science
Univ of North Carolina at Chapel Hill	Ph.D.	1990	Toxicology
Univ of North Carolina at Chapel Hill	M.P.H.	1992	Environmental Sciences
Wake Forest Univ School of Med	Postdoc	1992-1994	Biochemistry
Univ of North Carolina at Chapel Hill	Postdoc	1994-1996	Toxicology

PROFESSIONAL EXPERIENCE

1996 - 1997 Research Associate, Center for Environmental Medicine and Lung Biology, University of North Carolina
1997-Present Research Biologist/Principal Investigator, Clinical Research Branch, Human Studies Division, NHEERL

PROFESSIONAL CERTIFICATION

1996-Present Diplomate, American Board of Toxicology

POSITIONS, AWARDS AND HONORS

1993 Environmental Science and Engineering Fellow, American Association for the Advancement of Science /Environmental Protection Agency, Office of Health and Environmental Assessment, U.S. EPA.
1997 Grant Recipient: Mechanism of Particulate-Induced Mediator Expression in Human Airway Epithelial Cells. U.S. EPA.
1997-Present Adjunct Assistant Professor, Curriculum in Toxicology, University of North Carolina at Chapel Hill

RECENT INVITED PRESENTATIONS

1996 Induction of Cyclooxygenase 2 Expression in Human Airway Epithelial Cells Exposed to Residual Oil Fly Ash. Duke University Medical Center, Durham, NC.
1997 Signaling Mechanisms of Particulate-Induced Inflammatory Mediator Expression. Seminar Presentation, Human Studies Division, U.S. EPA.
1999 Metal-Induced Activation of Signaling Pathways in Human Airway Epithelial Cells. 6th International Conference on Environmental and Occupational Lung Disease. Vancouver, BC, Canada.
1998 Tyrosine Phosphatases as Targets in Metal-Induced Cell Signaling. Work in Progress, Human Studies Division, Human Studies Division, U.S. EPA
1999 Signaling Mechanisms in Human Airway Epithelial Cells Exposed to Combustion-Derived Metallic Compounds. National Institute of Environmental Health Sciences, Research Triangle Park, NC.

SELECTED PUBLICATIONS

Wu, W., Graves, LM, Gill, GN, Parsons, SJ and **Samet, JM**. (2002). Src-dependent phosphorylation of the epidermal growth factor receptor on tyrosine 845 is required for Zinc-induced Ras activation. *J. Biol. Chem.* 277:24252-24257.
Samet, JM, Silbajoris, R, Huang, T and Jaspers, I. (2002). Transcription factor activation following exposure of an intact lung preparation to metallic particulate matter. *Environ. Health Perspect.* 110:985-990.
Ghio, AJ, Silbajoris, R, Carson, JL and **Samet, JM** (2002). Biologic effects of oil fly ash. *Environ. Health Persp.* 110:89-94.
Wu, W, Jaspers, I, Zhang, W, Graves, LM, **Samet, JM**. (2001). Role of Ras in metal-induced EGF receptor signaling and NFκB activation in human airway epithelial cells. *Am. J. Physiol.: Lung Mol. Cell. Physiol.* 282:L1040-1048.
Wu, W, **Samet, JM**, Ghio, AJ and Devlin RB (2001). Activation of EGF receptor signaling in human airway epithelial cells exposed to ambient air particles. *Am. Journal of Physiol.: Lung Cell and Mol. Physiol.* 281:L483-L489.
Samet, JM, Hatch, GE, Horstman, D, Steck, SE, Arab, L, Bromberg, PA, Levine, M and Devlin, RB. (2001). Effect of antioxidant status on ozone-induced lung injury in human subjects. *Am. J. Respir. Crit. Care Med.* 164:819-825.
Fonteh, AN, Marion, CR, Barham, BJ, Edens, MB, Atsumi, G, **Samet, JM**, High, KP and Chilton, FH.(2001). Enhancement of Mast Cell Survival; a Novel Function of Some secretory Phospholipase A₂ Isotypes. *J. Immunology.* 167:4161-4171.
Huang, YT, Wu, W., Ghio, AG, Carter, JD, Silbajoris, R, Devlin, RB and **Samet, JM** (2001). Acute lung injury induced by Residual oil fly ash and tyrosine phosphorylation. *Exp. Lung Res.* In press.
Jaspers, I, Zhang, W, Fraser, A, **Samet, JM** and Reed W. (2001). Hydrogen peroxide has opposing effect on IKK activity and IκBα breakdown in airway epithelial cells. *Am. J. Respir. Cell Mol. Biol.* 24:769-777.
Longphre M, Li D, Li J, Matovinovic E, Gallup M, Samet JM, Basbaum CB. (2000). Lung mucin production is stimulated by the

- air pollutant residual oil fly ash. *Toxicol Appl Pharmacol.* 162:86-92.
- Silbajoris, R, Ghio, AJ, Dreher, KL and **Samet, JM** (2000). In Vivo and In Vitro Correlation of Pulmonary MAP Kinase Activation Following Metallic Exposure. *Inhal Toxicol.*12:453-468.
- Jaspers I, **Samet JM**, Erzurum S, Reed W. (2000) Vanadium-induced kappaB-dependent transcription depends upon peroxide-induced activation of the p38 mitogen-activated protein kinase. *Am J Respir Cell Mol Biol.* 2000 Jul;23(1):95-102.
- Samet, JM**, Ghio, AJ and Madden, MC (1999). Induction of cyclooxygenase 2 expression in rats exposed to residual oil fly ash. *Exp. Lung Res.*
- Wu, W, Graves, LM, Jaspers, I, Devlin, RB and **Samet, JM** (1999). Activation of the EGF receptor signaling pathway in human airway epithelial cells exposed to metals. *Am. J. Physiol.:Lung Cell. Mol. Biol.* L924-L931.
- Samet, JM**, Silbajoris, R, Wu, W and Graves, LM (1999). Tyrosine phosphatases as targets in metal-induced signaling in human airway epithelial cells. *Am. J. Respir. Cell. Mol. Biol.* 21:357-364.
- Jaspers, I, **Samet, JM** and Reed, W (1999). Arsenite activates kappaB-dependent IL-8 gene expression in airway epithelium in the absence of nuclear translocation of NF-kappaB. *J. Biol. Chem.* 274:31025-31033.
- Frampton, MW, Ghio, AJ, **Samet, JM**, Carson, JL, Carter, JD and Devlin, RB. (1999). Effect of ambient air particles from the Utah Valley on human airway epithelial cells. *Am. J. Physiol.:Lung Cell. Mol. Biol.* 277:L960-L967.
- Ghio, AJ, Carter, JD, Dailey, LA, Devlin, RB and **Samet, JM** (1999) Respiratory epithelial cells demonstrate lactoferrin receptors which increase after metal exposure. *Am. J. Physiol.:Lung Cell. Mol. Biol.* 276:L933-L940.
- Madden, MC, Friedman, M., Dailey, LA and **Samet, JM**. (1998). Inhibition of Arachidonic acid esterification in human airway epithelial cells exposed to ozone in vitro. *Inhal. Toxicol.*10:795-811.
- Samet, JM**, Graves, LM, Quay, J, Dailey, LA, Devlin, RB, Ghio, AJ, Weidong Wu, Bromberg, PA and Reed, W (1998). Activation of MAP kinases in human bronchial epithelial cells exposed to metals. *Am. J. Physiol.: Lung Mol. Cell Biol.* 275: L551-L558.
- Fonteh, AN, **Samet, JM**, Surette, M, Reed, W and Chilton, FH (1998). Mechanisms that account for the selective release of arachidonic acid from whole cells by secretory phospholipase A₂. *Biochim. Biophys. Acta.* 55296:1-14.
- Ghio, A. J., Carter, JD, **Samet, JM**, Reed, W, Quay, J, Dailey, LA, Richards, JH and Devlin, RB (1998). Metal-dependent expression of ferritin and lactoferrin by respiratory epithelial cells. *American Journal of Physiology.* 274:L728-36, 1998.
- Quay, J.L., Reed, W., **Samet, J** and Devlin. R.B. (1998). Air pollution particles induce IL-6 gene expression in human airway epithelial cells via NFkB activation. *Am. J. Respir. Cell Mol. Biol.* 19:98-106.
- Kennedy, TK, Ghio, AJ, Reed, W, **Samet, J**, Zagorski, J, Quay, J, Carter, J, Dailey, L, Devlin, RB, and Hoidal, JR. (1997). Copper- and IL-8-dependent inflammation and NF-kB activation by particulate air pollution. *Am. J. Respir. Cell. Mol. Biol.* 19: 366-378.
- Carter, JD, Ghio, AJ, **Samet, JM**, Reed, W and Devlin, RB (1997). Cytokine production by human airway epithelial cells after exposure to an air pollution particle is metal-dependent. *Toxicol. Appl. Pharmacol.* 146:180-8.
- Ghio, AJ, Carter, JD, **Samet, JM**, Quay, J, Wortman, IA, Richards, JH, Kennedy, TP and Devlin, RB (1997). Ferritin expression after in vitro exposures of human alveolar macrophages to silica is iron-dependent. *Am. J. Respir. Cell. Mol. Biol.*17:533-40
- Ghio, AJ, Richards, JH, Dittrich, KL, **Samet, JM** (1997). Metal storage and transport proteins increase after exposure of the rat lung to an air pollution particle. *Toxicol. Pathol.*26:388-394.
- Samet, JM**, Stonehuerner, J, Reed, W, Devlin, RB, Dailey, LA, Ghio, AJ (1997). Disruption of Protein Tyrosine Phosphate Homeostasis in Human Airway Epithelial Cells Exposed to Residual Oil Fly Ash. *Am. J. Physiol. Lung Cell. Mol. Biol.* 272:L246-L432.
- Ghio, AJ, Pritchard, RJ, Dietrich, K., **Samet, JM**. Non-heme [Fe³⁺] in the lung increases with age in both the rat and man (1997). *J. Lab. Clin. Med.* 129:1-8.
- Samet, JM**, Reed, W, Ghio, AJ, Devlin, RB, Carter, J, Dailey, LA, Bromberg, PA, Madden, MC (1996). Induction of prostaglandin H synthase 2 expression in cultured airway epithelial cells exposed to residual oil fly ash. *Toxicol. Appl. Pharmacol.* 141:159-168.
- Samet, JM**, Fonteh, AN, Galli, SJ, Tsai, M, Fasano, MB, Chilton, FH (1996). Alterations in arachidonic acid metabolism in mouse mast cells induced to undergo maturation in response to stem cell factor. *J. Allergy Clin. Immunol.* 97:1329-1341.
- Samet, JM**, Madden, MC, Fonteh, AN (1996). Characterization of a secretory phospholipase A₂ in human bronchoalveolar lavage fluid. *Exp. Lung Res.* 22:299-315.
- Samet, JM**, Fasano, MB, Fonteh, AN, Chilton, FH (1995). Differential regulation of phospholipase A₂ and cyclooxygenase 1 by cytokines and dexamethasone in mast cells. *J. Biol. Chem.* 270:8044-8049.
- Fonteh, AN, **Samet, JM**, Chilton, FH (1995). Regulation of arachidonic acid, eicosanoid and PLA₂ levels in murine mast cells by recombinant stem cell factor. *J. Clin. Invest.* 96:1432-1439.
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